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09/903,904	07/11/2001	Hung-Lien Shen	1007-012	1858

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EXAMINER

HAILU, TADESSE

ART UNIT PAPER NUMBER

2173

DATE MAILED: 01/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

PPG

Office Action Summary

Application No.

09/903,904

Applicant(s)

SHEN, HUNG-LIEN

Examiner

Tadesse Hailu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This Office Action is in response to the patent application number 09/903,904 filed 11 July 2001.
2. The pending claims 1-19 are examined as follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 1-17, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-17, and 19 recite the limitation " the received data signal" in each respective claim. There are insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claim 10 is rejected under 35 U.S.C. 102(a) as being anticipated by IBM Technical Bulletin, "Computer Input Device Via Nerve Signal," August 1989.

With regard to claim 10:

IBM describes the limitation of claim 10. As illustrated in Fig. 1, a sensing device (EMG sensors) coupled by the user's wrist is disclosed. Similar to the current claim, the sensing device

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is capable of sensing wrist's muscle movements to thereby produce a corresponding electrical signal (see IBM, pages 1-3). Sensing the user's wrist muscle movements to thereby produce a corresponding data signal is also disclosed (see IBM, pages 1-3). Transmitting the data signal to the computer system is also disclosed (see IBM, Fig. 2). Once the data signal is received by the computer, the computer matches or maps the data signal to the corresponding alpha numeric character and displaying the alpha numeric character on a computer screen (see IBM, pages 1-3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM

Technical Bulletin, "Computer Input Device Via Nerve Signal," in view of Fukumoto et al US Pat. No. 6,380,923.

With regard to claim 11:

IBM describes and illustrates A/D conversion (signal conversion unit) (Fig. 2, #21), and a filter (signal processing unit) (Fig. 2, #21). Furthermore, while IBM describes a computer input device (Fig. 1) in a form of elastic cuff with built-in EMG (electromyographic) sensors to sense a wrist muscle movement, but the claim calls for piezoelectric sensor which IBM is silent in disclosing it. Fukumoto discloses wearable input device with piezoelectric sensor (Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to replace piezoelectric sensor in place of electromyographic sensor

because both are sensing hand (wrist) muscle movement of the user and also as suggested by IBM, adding or incorporating more sensors would yield a better interpretation of data signal.

With regard to claim 12:

IBM in view of Fukumoto describes and illustrates a piezoelectric sensor attached to the user's wrist to sense the wrist's muscle movement representing a keyboard character intended for input to the computer system and produces a corresponding electrical signal (see IBM, pages 1-3).

With regard to claim 13:

IBM in view of Fukumoto illustrates that the signal conversion unit is coupling with piezoelectric sensor (see IBM, Fig. 1).

With regard to claims 14 and 15:

IBM in view of Fukumoto describes that the data signal as a digital signal, and as an analog signal (see IBM, pages 1-3).

With regard to claim 16:

IBM in view of Fukumoto illustrates that the signal filtering mechanism (the signal processing unit) are integrated/coupled to A/D conversion unit (see IBM, Fig. 2). The signal filtering mechanism, after filtering (processing) the received data signal from A/D conversion, transmits to the computer system (see IBM, Fig. 2).

With regard to claim 17:

IBM illustrates and describes a data input method for use with a sensing device including (electromyographic) sensors, a signal conversion unit coupled to a signal filtering (processing unit), to input data to a computer system. IBM further describes coupling the sensing

device (IBM, Fig. 1) to user's wrist, the sensing device capable of sensing wrist's muscle movements to thereby, producing a corresponding electrical signal (see IBM, Figs. 1 and 2). IBM further describes and illustrates sensing the user's hand (wrist) muscle movements representing a keyboard character. IBM also describes converting the electrical signal into a data signal. The filtering mechanism filters the data signal for transmission to the computer system. The computer system then matches the received data signal to the corresponding data and displays the data on the monitor screen (see IBM, pages 1-3).

Furthermore, while IBM describes a computer input device (Fig. 1) in a form of elastic cuff with built-in EMG (electromyographic) sensors to sense a wrist muscle movement, but the claim calls for piezoelectric sensor which IBM is silent in disclosing it. Fukumoto discloses wearable input device with piezoelectric sensor (Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to replace piezoelectric sensor in place of electromyographic sensor because both are sensing hand (wrist) muscle movement of the user and also as suggested by IBM, adding or incorporating more sensors would yield a better interpretation of data signal.

With regard to claim 18:

IBM further describes and illustrates a data input device for use to input data to a computer system (See IBM, Fig. 1), including an electromyographic sensors coupled to the user's hand and capable of sensing hand's muscle movements to thereby produce a corresponding electrical signal representing a computer data intended for input to the computer system (see IBM, pages 1-3). IBM in view of Fukumoto illustrates that the signal conversion unit is coupling with electromyographic sensors (see IBM, Fig. 1). IBM in view of Fukumoto

illustrates that the signal filtering mechanism (the signal processing unit) are integrated/coupled to A/D conversion unit (see IBM, Fig. 2). The signal filtering mechanism, after filtering (processing) the received data signal from A/D conversion, transmits to the computer system (see IBM, Fig. 2).

Furthermore, while IBM describes a computer input device (Fig. 1) in a form of elastic cuff with built-in EMG (electromyographic) sensors to sense a wrist muscle movement, but the claim calls for piezoelectric sensor which IBM is silent in disclosing it. Fukumoto discloses wearable input device with piezoelectric sensor (Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to replace piezoelectric sensor in place of electromyographic sensor because both are sensing hand (wrist) muscle movement of the user and also as suggested by IBM, adding or incorporating more sensors would yield a better interpretation of data signal.

With regard to claim 19:

Independent claim 19 corresponds generally to independent claim 18 and recites similar features in system form, and therefore is rejected under the same rationale.

Allowable Subject Matter

6. Claims 1-9 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art of records failed to teach the limitations recited in independent claim 1, that is, "predefining a set of combinations of hand digit movements, each combination of hand digit movements representing a specific character," and "predefining a character mapping table which

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maps each combination of hand digit movements predefined in the above step to a specific character.”

Thus, prior art neither renders obvious nor anticipates the combination of claimed elements in light of the specification.

Conclusion

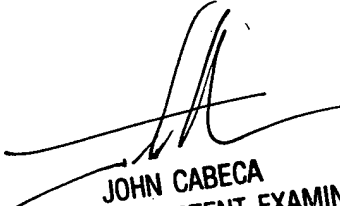
7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tadesse Hailu, whose telephone number is (703) 306-2799. The Examiner can normally be reached on M-F from 10:00 - 6:30 ET. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, John Cabeca, can be reached at (703) 308-3116 Art Unit 2173 CPK 2-4A51.

8. The Official fax number is (703) 872-9306.

9. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Tadesse Hailu

Jan 8, 2004


JOHN CABECA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100